

of nine nesting attempts, but we suspect similar losses at these sites. Based on RSH nesting attempts for which we have data, survival rates in 1993 were 0.33 fledglings per nesting attempt or 0.86 fledglings per successful nesting attempt. In comparison, between 1983 and 1992 we determined the outcome of 44 nesting attempts within the Upper Mississippi River Valley; of these, 33 (75%) were successful producing 71 fledging-age RSH for an average of 1.61 fledglings per nesting attempt, or 2.15 fledglings per successful nesting attempt. Data on RSH nest site selection, nest site fidelity, differences in relative abundance in the refuge districts, and the proposed management recommendations for RSH nesting sites will also be presented.

PRODUCTIVITY AT STELLER'S SEA EAGLE AND OSPREY NESTS ON THE MAGADAN STATE NATURE RESERVE, MAGADAN, RUSSIA

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From 1991 through 1993 nesting Steller's sea eagles (*Haliaeetus pelagicus*) and osprey (*Pandion haliaetus*) were surveyed within the Kava-Chulomzhe portion of the Magadan State Nature Reserve to determine their productivity. In 1992 and 1993 these surveys were done by means of an ultralight aircraft. A total of 25 sea eagle territories were active during the three-year period. Nests of sea eagles were usually located in poplar (*Populus* sp.) or larch (*Larix* sp.) within 300 m of a river. The distance between neighboring nests varied between 3.5 km and 22 km for the sea eagles and between 2 and 26 km for the osprey. Steller's sea eagles produced 0.42 and 0.46 chicks per territorial pair in 1991 and 1992 respectively. Osprey produced two chicks per territorial pair in 1992. Production data for 1993 and information on food habits will also be presented. The use of an ultralight aircraft in the survey of eagle and osprey nests will be discussed.

EFFECTS OF RADIO-TRANSMITTERS ON PRODUCTIVITY OF PRAIRIE FALCONS AND GOLDEN EAGLES

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The use of radiotelemetry to study factors such as behavior or home range characteristics requires that researchers consider the potential influence that radio-transmitters may have on their subjects. Here we report the influence of radio-transmitters on the productivity of prairie falcons (*Falco mexicanus*) and golden eagles (*Aquila chrysaetos*) during the 1991-93 breeding seasons in the Snake River Birds of Prey Area. We determined the percent of occupied nesting areas that were successful and the number of young

fledged by instrumented and control pairs for both eagles and falcons. Additionally, we compared the weights of fledgling falcons and the prey delivery rates of adult falcons between instrumented and control pairs. Instrumented falcons failed to show an influence for any parameter during any of the three seasons, although success was slightly lower during the 1991 and 1993 seasons. We found no differences in the success or the number of young fledged for golden eagles during the 1992 breeding season (the first year with an adequate sample of instrumented eagles), but there was a highly significant difference between instrumented and control pairs for both measures during the 1993 season. We are currently examining estimates of prey densities and the responses of falcons and eagles to changes in prey, to understand the variable influence of radio-transmitters between falcons and eagles and between breeding seasons.

ARE AMERICAN KESTRELS PROMISCUOUS NYMPHOMANIACS?

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The American kestrel (*Falco sparverius*) has one of the highest copulation frequencies among birds known to date. Using a wild nestbox population in the Montreal area, our aim was to determine the frequency and timing of copulations throughout the breeding period and to observe any extra-pair copulations. In 1992 eight pairs of breeding kestrels were observed from pair formation to laying for 130 hr, and 10 pairs for 350 hr in 1993. The number of copulations per pair per season averaged 450. For the majority of the copulations the female was either the initiator or a very willing partner and overall seemed to regulate the act. Copulation rates were highest around -20 to -15 d from the laying of the first egg and typically dropped to near zero as the eggs were being laid (when the chances of fertilizing the female are highest). This pattern cannot be explained solely by sperm competition pressures. We believe that the early peak of copulations may be better explained as a way to strengthen the pair bond. No extra-pair copulations were observed from the focal birds. As a better estimate of the extent of extra-pair paternity, blood samples from 25 kestrel families have been DNA fingerprinted.

SHARP-SHINNED HAWK COUNTS AT HAWK MOUNTAIN, PA, AND CAPE MAY, NJ: AN INDICATOR OF POPULATION DECLINES OR A CHANGE IN GEOGRAPHIC DISTRIBUTIONS?

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